

CLAIMS

1. A solid-state imaging apparatus comprising a plurality of pixels including adjacent first and second pixels, the first and second pixels including photodiodes formed on a substrate to convert light into signal charges and accumulate the signal charges, transfer transistors having gate electrodes, respectively, and reading out the signal charges accumulated in the photodiodes, and floating diffusions formed in regions of the substrate located to respective one sides of the gate electrodes of the transfer transistors to convert the signal charges read out by the transfer transistors into electric potential, respectively,
10 wherein the first pixel further includes a reset transistor having a gate electrode, connected at one end to the photodiodes of the first and second pixels and supplied at the other end with a power voltage, and
the second pixel further includes an amplifier transistor having a gate electrode connected to the transfer transistors of the first and second pixel and amplifying the electric potential into which the signal charges are converted in the associated floating diffusion.
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2. The solid-state imaging apparatus of Claim 1, wherein
the first pixel is formed without the amplifier transistor, and
the second pixel is formed without the reset transistor.
3. The solid-state imaging apparatus of Claim 1, wherein
20 the plurality of pixels are arranged in a one-dimensional or two-dimensional manner such that the distance between the centers of the photodiodes in each adjacent two of the plurality of pixels along the direction of alignment thereof is fixed.
4. The solid-state imaging apparatus of Claim 1, wherein
the first and second pixels have the same shape and size, and
25 the location of the gate electrode of the reset transistor in the first pixel is the same as that of the gate electrode of the amplifier transistor in the second pixel.
5. The solid-state imaging apparatus of Claim 1 further comprising:

a first contact connected to the reset transistor; and
a second contact connected to the amplifier transistor,
wherein the location of the first contact in the first pixel is the same as that of the
second contact in the second pixel.

- 5 6. The solid-state imaging apparatus of Claim 1 further comprising:
 a first contact of metal connected to the reset transistor; and
 a second contact of metal connected to the amplifier transistor.
7. The solid-state imaging apparatus of Claim 4 further comprising:
 an interlayer insulating film formed on the pixels; and
10 a microlens formed on a part of the interlayer insulating film located immediately
 above the photodiode.